

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-5, 8, 9, and 11-15 are pending, with Claims 6-7 and 10 cancelled without prejudice or disclaimer, Claims 1, 5, 9, 11, and 15 being amended to even better reflect the definition of an uncovered background at page 14, lines 10-12 and a covered background at page 16, lines 10-12, for example. The support for the elaboration on the input of the first and second contour subsets of the contour of the object appears at page 19, lines 7-16 of the specification, for example.

As the present amendment merely incorporates specification definitions that were already set forth in the specification and dependent Claims 5 and 15 and adds clarifications of existing limitations, it is clear that no new search or examination issues will be raised as to the entry of the present amendment. Accordingly entry of this Amendment under 37 CFR § 1.116 is submitted to be proper.

The Official Action presents a rejection of Claims 1-5, 8, 9, and 11-15 under 35 U.S.C. §102(b) as being anticipated by Kondo.

As disclosed in Applicants' originally filed specification, the claimed use of a first frame contour of a first subset of the contour of the object to be extracted within a first frame covered background area, and a last frame contour of a second subset of the contour of the object to be extracted within the last frame uncovered background area improves the extraction of a moving object as compared to using contour information from only one frame as in method A, described at page 34, lines 22-24, and method B, described at page 34, line 24 to page 35, line 2. See the Specification at page 36, line 8 to page 38, line 19 and Figures 21-29, for example.

Kondo has no teachings or suggestions of the subject matter of independent Claims 1, 9, and 11 that all require, among other things, that the user be prompted “to input a first frame contour of a first subset of the contour of the object to be extracted within the first frame covered background area and to input a last frame contour of a second subset of the contour of the object to be extracted within the last frame uncovered background area, respectively, wherein the first subset differs from the second subset and neither the first subset nor the second subset includes the entire contour of the object.” Clearly different subset parts of the contour of the object to be extracted must be input by the user in two different frames, i.e., a first frame with the defined covered background area and a last frame with the defined uncovered background area.

Just as clearly, Kondo at best teaches extracting objects using a separate target frame processing unit 2 and object extracting unit 3 where the target frame buffer 21 of target frame processing unit 2 stores image data as to a target frame that was read from the storage 1. See col. 5, lines 6-8 of Kondo. On the other hand, col. 5, lines 21-50, of Kondo teach the use of a separate extracting unit 3 as follows:

The object extracting unit 3 extracts the object from the target frame stored in the target frame buffer 21 under the control of the processing control unit 7 through a plurality of processing.

That is, the object extracting unit 3 comprises a boundary detecting section 31, a cut-out section 32, a result processing section 33, etc. The boundary detecting section 31 detects a boundary portion of the target frame image which is stored in the target frame buffer 21, and generates a plurality of types (herein, e.g., three types) of boundary images which are formed of binary data indicating the boundary portion and a portion excluding the boundary portion (hereinafter, when necessary, referred to as a non-boundary portion). The cut-out section 32 refers to the three boundary images which are generated by the boundary detecting section 31, and cuts out an object area from the target frame which is stored in the target frame buffer 21. Further, the cut-out section 32 comprises three output buffers 32A to 32C for storing therein the areas which are cut out by referring to the three boundary images. The result processing section 33 comprises three result buffers 33A to 33C corresponding to the three output buffers 32A to 32C, and combines storage contents of the output buffers 32A to 32C to the extracted results of the object, which are stored in the object buffer 23, and stores the three combined results

to the result buffers 33A to 33C. Further, the result processing section 33 selects one of the storage contents of the result buffers 33A to 33C based on an input supplied by the user's operation of the mouse 9, and reflects the selected storage contents to the storage contents of the object buffer 23.

Accordingly, the outstanding Action is in error at the top of page 4 in suggesting that the Kondo boundary detection section 31 corresponds to the Claim 1 image processing apparatus for extracting an object in an image that itself must include the recited "image obtaining means," "motion analyzing mean," "frame detecting means," "means for prompting," and "object extracting means." Instead, and as noted above, "the boundary detecting section 31 detects a boundary portion of the target frame image which is stored in the target frame buffer 21, and generates a plurality of types (herein, e.g., three types) of boundary images which are formed of binary data indicating the boundary portion and a portion excluding the boundary portion (hereinafter, when necessary, referred to as a non-boundary portion)."

Besides this erroneous interpretation that suggests that the Kondo boundary detection section 31 teaches or suggests an arrangement including the above-noted "means" of the Claim 1 image processing apparatus, page 4 of the outstanding Action further erroneously interprets the Claim 1 recited "image obtaining means for obtaining image data of a specified image" as corresponding to the Kondo target frame processing unit 2 and the Claim 1 recited "motion analyzing means" as corresponding to the Kondo motion detecting unit 6.

However, the Claim 1 "motion analyzing means" is required to include the Claim 1 recited "frame detecting means" that must detect "a first frame containing a first frame covered background area that corresponds to a background area that is gradually covered by the object due to frame-to-frame apparent movement of the object" while also "detecting a last frame containing a last frame uncovered background area that corresponds to a background area that gradually changes from being covered by the object to being uncovered by the object due to the apparent frame-to-frame movement of the object." The Kondo

motion detecting unit 6 “performs motion detecting processing (such as block matching) for the image data of the before-frame, which is stored in the before-frame buffer 61 and for the image data of the target frame, which is stored in the target frame buffer 21 in the target frame processing unit 2, thereby detecting the motion vector and supplying it to the processing control unit 7.” See col. 6, lines 40-46. To whatever extent that two frames are used, there is no suggestion in Kondo that either of these frames correspond to the claimed “first frame containing a first frame covered background area that corresponds to a background area that is gradually covered by the object due to frame-to-frame apparent movement of the object” or recited “last frame containing a last frame uncovered background area that corresponds to a background area that gradually changes from being covered by the object to being uncovered by the object due to the apparent frame-to-frame movement of the object.”

Moreover, to whatever extent that the buttons 201-204 are provided and relied on along with FIG. 21 at page 6 of the outstanding Action as to the previously recited similar limitations of the first and final frames in Claim 5, this reliance is clearly misplaced.

In this regard, the display button 201 is described at col. 7, lines 42-50, of Kondo as follows:

The user operates the change display button 201 when switching the image to be displayed on the reference screen. More specifically, the selector 24 sequentially selects the outputs of the target frame buffer 21, the background buffer 22, and the object buffer 23 each time clicking the change display button 201 by using the mouse 9. Consequently, the image displayed on the reference screen is sequentially switched to the original image, the object, and the background image.

This change the image displayed on the reference screen is not relevant to the claimed “first frame containing a first frame covered background area that corresponds to a background area that is gradually covered by the object due to frame-to-frame apparent movement of the object” or recited “last frame containing a last frame uncovered background

area that corresponds to a background area that gradually changes from being covered by the object to being uncovered by the object due to the apparent frame-to-frame movement of the object.”

The use record button 202 is described at col. 7, lines 51-60, of Kondo as follows:

The user operates the use record button 202 when it is determined whether or not the history information stored in the history managing unit 4 is used to extract the object from the target frame stored in the target frame buffer 21. More specifically, the use record button 202 is clicked by the mouse 9 and, then, a pull down menu for setting the allowance of use of the history information is displayed on the reference screen. Incidentally, according to the embodiment, it is assumed that the use of the history information is fundamentally permitted.

Once again, this user operated optional selection for introducing history information does not teach or suggest the claimed first and final frames as set forth above.

The delete partly button 203 is described at col. 7, lines 61-col. 8, line 5, of Kondo to delete background from the image stored in the object buffer 23 as follows:

The user operates the delete partly button 203 when a part of the image stored in the object buffer 23 as the object is deleted (the screen is returned to the background image from the object image). More specifically, the user operates the mouse 9 so that a predetermined range of the object displayed on the reference screen is designated, thereafter, the delete partly button 203 is clicked by using the mouse 9, and the predetermined range of the object is deleted from the object buffer 23. The delete partly button 203 is used when a part of the background is fetched to the object buffer 23 as the object and then the background is deleted from the object.

Once again, this delete partly button 203 for deleting background from the image stored in the object buffer 23 does not teach or suggest the claimed first and final frames as set forth above.

Also, FIG. 21 shows objects in the target frame and the before frame, not that there is any “first frame containing a first frame covered background area that corresponds to a background area that is gradually covered by the object due to frame-to-frame apparent movement of the object” or recited “last frame containing a last frame uncovered background area that corresponds to a background area that gradually changes from being covered by the

object to being uncovered by the object due to the apparent frame-to-frame movement of the object.”

Furthermore, whatever else can be said as to the buttons 201-204 are provided and relied on along with FIG. 21 at page 6 of the outstanding Action, it cannot be said that they teach or suggest the Claim 5 “setting means for setting, based on a comparison result obtained by the comparison means, in the background of the image, the first frame covered background area and the last frame uncovered background area.” (Emphasis added).

With further regard to interpreting a “means” claim like Claim 1, the PTO reviewing court has made it clear that the PTO has the burden of construing “the scope of the structures disclosed in the specification for the claimed ‘. . . means,’” and then it has the burden to explain how such “means” as “disclosed in the specification” are “structurally equivalent” to what is embodied in the reference. *See Gechter v. Davidson*, 116 F.3d 1454, 1460, 43 USPQ2d 1030, 1035 (Fed. Cir. 1997). The outstanding Action fails to meet these burdens as to the “means” recited by Claims 1-5 and 8.

Furthermore, it is well established that anticipation under 35 U.S.C. § 102 requires the citation of a single prior art reference that discloses each and every element arranged together exactly as in the claimed arrangement. *See In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990); *Lindemann Maschinen Fabrik GMBH v. American Hoist & Derrick Co.*, 221 USPQ 481 (Fed. Cir. 1984); *Ex parte Gould*, 6 USPQ2d 1680 (Bd. Pat. App. & Int. 1987); and *Ex parte Osmond*, 191 USPQ 334 (Bd. Pat. App. & Int. 1973). Not only are the features of independent Claim 1 not taught to be arranged as specified by that claim, the arrangements required to provide the subject matter of independent method Claim 9 and independent computer readable storage medium Claim 11 are also not taught or suggested.

In addition both independent Claim 9 and 11 require a step of “analyzing motion of an object included in the image based on the obtained image data” that includes “detecting a first

frame containing a first frame covered background area that corresponds to a background area that is gradually covered by the object due to frame-to-frame apparent movement of the object and detecting a last frame containing a last frame uncovered background area that corresponds to a background area that gradually changes from being covered by the object to being uncovered by the object due to the apparent frame-to-frame movement of the object.”

Once again, to whatever extent that two frames are used as part of the detecting the motion vector processing relative to the above-noted motion detecting unit 6 of Kondo, there is no suggestion in Kondo that either of these two frames correspond to the claimed “first frame containing a first frame covered background area that corresponds to a background area that is gradually covered by the object due to frame-to-frame apparent movement of the object” or recited “last frame containing a last frame uncovered background area that corresponds to a background area that gradually changes from being covered by the object to being uncovered by the object due to the apparent frame-to-frame movement of the object.”

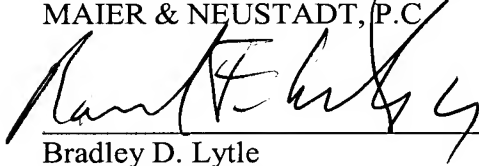
As Kondo does not teach or suggest all the elements of independent Claims 1, 9 and 11, Applicants submit the inventions defined by Claims 1, 9 and 11, and all claims depending there from, are not anticipated by Kondo for at least the reasons stated above

In addition, each of dependent Claims 2-5, 8, and 12 -15 add further features not taught or suggested by Kondo as noted relative to exemplary dependent Claim 5 features discussed above. Thus, dependent Claims 2-5, 8, and 12 -15 are clearly not anticipated by Kondo for this reason as well.

Accordingly, in view of the present amendment and in light of the previous discussion, Applicants respectfully submit that the present application is in condition for allowance and respectfully request an early and favorable action to that effect.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "Bradley D. Lytle", is written over a horizontal line.

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